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QL

QUANTA

THE DEFINITIVE QL MAGAZINE



EDITORIAL

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COPYDATE



QUANTA

INFORMATION ON THE ASSOCIATION

Membership of QUANTA, the independent QL user group, is by annual subscription. The Membership Secretary can supply full details. Copies of the association's constitution & annual accounts are available from the Secretary.

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www.Facebook.com/QUANTA.org

You may be wondering what the front cover picture is about on this current issue of the magazine, well all will be revealed shortly. First though, some thoughts.

As I sit down to write this editorial I am quite concerned. I currently have one short article for inclusion in the magazine and nothing else, I have one idea for inclusion as an article that I have been perusing for the last two or three months but it needs fleshing out so to speak and is far from complete.

Traditionally, hmmm, no “traditionally” is the wrong word here, consistently, the August/September Issue in my experience as editor, has been the most worrying due to a distinct lack of copy. Articles dry up around this period and the news always seems non-existent. As editor it is a worrying time as the various deadlines, both set and flexible come and go.

Yet we still get the magazine out to our membership, and habitually plead for more input. You may remember a while back we printed a comprehensive list of ideas and areas to assist those who had not yet submitted any copy for the magazine and would like to but didn't know how to start. I make no bones or apologies for reproducing that here again (slightly updated) as a way of re-emphasising and repeating the need.

A Guide for QUANTA submissions

'Writers block' can kick in quite easily sometimes, sitting in front of a blank sheet of paper and wondering where to start! (for paper, read computer screen). Indeed it may seem to many that

SuperBASIC programming would be more prolific if it were not for the exact same reason. With that in mind we think it is prudent to offer some guidelines to all, about what QUANTA would like our existing and potential contributors to provide us with as 'copy' (this is a publishing technical term).

Do not worry about your spelling or grammar not being up to scratch, that is something we can correct or even leave as necessary, the Editor's decision is final. The following however, is a list of topics or areas to give you some food for thought and also as budding writers for the QUANTA magazine get your creative juices flowing. The list is by no means exhaustive but it will give you a starting point to go by. It has been split in to three general areas for your convenience.

Hardware

(Sinclair QL, Spectrum, ZX 81, or anything related to that however remote)

Any review of a piece of hardware you have recently seen, obtained or bought that is related to or used with the Sinclair QL. An adapter, a retrofit, a disk interface perhaps. A description of project that is either large or small, something that you have, are undertaking or have completed. You could include the benefits of the hardware, the pitfalls, what could be improved if someone was to duplicate your work.

An item you have repaired or replaced on your system or that you have adapted or improved. There may be something you have a problem with, and that you are calling the QUANTA community for help. Even if this is resolved via other means (Forum/QL User list for example), do not assume every QUANTA member has access

to other forms of support. You could write about your own setup that you use at home, what you have put together and use either on a regular basis or periodically. If you're a collector of QL items, what are the reasons for your collection, what do you have. Repairs to Microdrive cartridges that have worked for you for example, (that particular issue seems to crop up a lot on the QL Forum).

Software

(Games, utilities, programming languages, apps, programs. Hmm what is the difference between and 'App' and a 'Program'?)

Small Listings - any number of lines really, from just a few to a couple of pages, single or multiple procedures and functions that you have written to either solve or explore a programming problem. Or even just for a bit of experimental fun.

Long listings - no program is too big, no language too strange, whether its just concepts, SuperBASIC, block diagrams, Boolean logic, assembler, mnemonics (that's one for you George), C# C++ C- - or just plain C, Pascal, Fortran or even S*BASIC, anything about everything would be appreciated.

Although the QL doesn't have every one it was interesting to read on Wikipedia (the fount of all knowledge) that there are around 1000 different languages listed. You could even send us an adapted listing from the QUANTA software library that you have modified or improved in some way.

Corrected errors or changes to existing programs in order to suit emulators or screens/colours etc. Any reviews of software -

whether it is games, applications or utilities would be helpful. These could be new or even old versions, remember that we do have new members coming back to the QL community and missed developments and releases over the years.

You could write about your favoured method of what you use on a regular basis including extensions you load in as a matter of preference including the order and why you load them in (i.e. for what purpose). Any request for program needs, issues, errors or even if you are stuck and would like suggestions or solutions to programming anomalies you may have. Any wants or needs or help in software projects you are undertaking or hope to undertake.

Other Media

Reviews of any other media such as books, magazines or even leaflets that others may appreciate. Electronics, both at high and low level anything that may be interesting to our readers. New developments that our illustrious News Editor may have missed on the Interweb.

We are also particularly interested in areas such as the Java based SMSQ/e from a software perspective, the Raspberry Pi does have some hardware potential, if you have you been able to get a uQLx emulator working on the RasPi for example.

I don't know enough about Linux to resolve the 'nothing' that happens when I try. A simple step by step approach would be very very helpful, assuming no knowledge at all for the reader. Finally you might just want to write in with a comment or two, please do, we have published such letters and comments in previous issues, why stop at thinking about it, write about it.

QUO VADIS
DESIGN

Independent Information
Technology Services

www.ql-qvd.com

QL/QDOS/SMSQ/E Software

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Home Products Support Company Contact

Welcome

Quo Vadis Design sells software for the Sinclair Quantum Leap computer (QL) and variants including a new OS called SMSQ/E.

The QL is a computer in its 25th year Anniversary.

News

- QVD QL News Blog - keep up to date
[News Blog](#)
24/04/2009
- Quo Vadis Design Website Launched
21/02/2009

FEATURED PRODUCT



BUY NOW!

Software emulations of the QL now available which run on a PC/Mac with Windows/ Linux or Mac Operating systems.

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**QPC2 IS NOW FREE AND
AVAILABLE FROM MARCEL
KILGUS WEBSITE**

<http://www.kilgus.net/qpc/index.html>

**Congratulations to Marcel
on becoming a Father**

**Check the QL News Blog on
our website for updates.
www.ql-qvd.com/blog**

So there you have it, please support the magazine if you can, I would love to be in a position of dealing with too much copy.

As to the front cover picture, well stop reading this for a second and take another look at the image, why would I put this image on the front cover? What is the significance of the image? How does it relate to the QL? All will be revealed.

I have often been accused by close friends and family of making tenuous links between conversations and the ability to form a joke around it, much to the groans of my wife and daughter. For some, the image I am referring to could be considered as such, however in the avowals of one of my favourite TV programmes QI,

I like to think that it would be 'quite interesting' to some of our readers, if not all. Got it? Good now continue. Studied the front cover image again? Good now continue. Looked up the word "avowals" in the dictionary? Good now continue.

I recently passed yet another milestone in the age race that we are all reluctantly on, and as a gift my daughter bought me tickets to go to the London Film & Comic-Con (Convention) at Olympia recently. This is similar to the COMIC-CON annually held in San Diego, USA only smaller and dearer.

I think my daughter was more excited about going than I was and this was partly my fault in bringing her up on a diet of Star Wars and Star Trek as a young and impressionable child (payback). It was enjoyable seeing lots of recognisable actors from TV and Film, my daughter getting especially excited about being photographed with and speaking to the Borg Queen. You couldn't wipe the smile off her face for the rest of the day.

I also saw two of my screen heroes from 1985, Michael J. Fox and Christopher Lloyd. Incidentally, they were celebrating 30 years of the film “Back to the Future” in a small seminar there. Against my initial feelings on the matter, my daughter insisted on driving us to London and parking close to Olympia too. It was on this 07:00 start journey, that I noticed her car’s information display panel (this is a Ford Ka).

As you can see from the display it showed that Radio One was playing so naturally I was trying to think about other things when I noticed the display font. In the past 30 odd years, the technology in cars has ‘improved’ tremendously and even in the most basic of vehicles the displays have come along way.

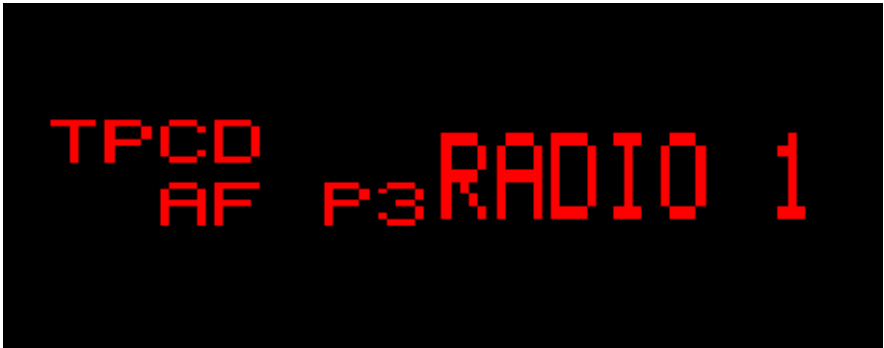
However all I saw in the Ka was a font that looked remarkably like a QL font, each character large or small was only five pixels across plus the space. The large font was the same as the small font only doubling up on the pixel size and all in one colour red (does this sound familiar?).

I laughed to myself at the IT advances, the graphical interfaces, the technological improvements we have experienced to date, yet there was what seemed to be a small piece of the QL right there in the information display panel (Go suck another lemon Apple! We beat you again).

I then pondered and liked to think that a few years ago somewhere in the Ford Motor Company design team was someone who owned or originally owned a Sinclair QL. The design team were struggling on how to display information efficiently, and this person then says “hmmm wait a minute!, I’ve got this great idea....”

So for comparison here is the simplest of SuperBASIC listings and the image it produces.

```
10 INK 2 : PAPER 0
20 CLS : CSIZE 2,0
30 PRINT\\\\" TPCD"
40 PRINT " AF P3"
50 CSIZE 2,1 : CURSOR 98,41
60 PRINT "RADIO 1"
```



A reminder please:

We are seeking a volunteer for the role of Treasurer

We are seeking a volunteer for the role of Membership Secretary

Or we are seeking a volunteer for the role of both

The Editor

If you have QL-related news items that you'd like us to include on this page, please get in touch with News Editor - Dilwyn Jones at news@quanta.org.uk

68020 Lives Again!

A company called Tekmos, based in Austin, Texas and in collaboration with Motorola, have reverse-engineered the old 68020 processor (a 68EC020 surface mount variant of which was used in the Super Gold Card add-on for the QL, for example) to produce a compatible replacement.

The TK68020 is described as “a functional equivalent of the Motorola M68020” and “pin-for-pin compatible.” It is a full 32-bit implementation of the M68000 family of microprocessors from Motorola. Note: pin-for-pin compatible with the 68020, not the 68EC020!

Before you get your hopes up – the physical differences between this and the variant used in the Super Gold Card, coupled with the lack of availability of the custom chips used, this does not open the way to making any new Super Gold Cards.

It is, however, interesting that there is still interest in the old Motorola chips which warrants companies making these chips these days. Further information on the Tekmos website at:

<http://www.tekmos.com/products/68020-microprocessors>

Spectrum Keyboard Lives Again

It's enough to make you think someone has made a brand new version of the Sinclair ZX Spectrum, but in reality this is a Spectrum-style keyboard from Elite, complete with rubber keys, Bluetooth 3.0 and USB to work with Recreated Spectrum emulation apps on Android, iOS etc.



Spectrum Keyboard

Available from companies like Argos and eBuyer in the UK for around £99.95 (although Argos were offering it at just under £80 prior to launch at the time of writing), it can also be used as a QWERTY keyboard with other devices.

It's supplied with iOS/Android apps allowing you to play Spectrum games on a tablet. Chuckie Egg, Sinclair BASIC and a games bundle are included.



Rear view (enhanced text for clarity)

Its full title is the Recreated Sinclair ZX Spectrum. The software runs on a tablet computer, while the 'Spectrum' itself is basically a bluetooth keyboard, but at least it taps into a market for Spectrum emulation on devices with touch screens and no physical keyboards.

Further details (plus a promotional video) from the Elite-systems website at <http://sinclairzxspectrum.elite-systems.co.uk/index.php>

FDI Driver v2.01

Version 2.01 of Martin Head's FDI (floppy disk image) driver is now available from the Utilities page on my website. At version 2.0 the FDI driver gained the ability to handle HD and ED disk images in addition to the original DD handling. Now, with version 2.01, the latest list of changes includes:

- (1) Blocks the mounting of image files to FDI slots that already have a mounted image file,
- (2) The checking for changed image files has been tightened up,

giving a 'bad or changed medium' error if I/O is attempted after an image has been changed,

- (3) Fixed the driver not working with JS ROMS,
- (4) Fixed FDI_FILE\$ not returning the image file's name.

To download the latest version, go to the Utilities page on my website and scroll down just past MDI driver (the Microdrive version of the software).

<http://www.dilwyn.me.uk/utills/index.html>

MDI Driver 1.06

The MDI driver has also been updated (same page). This update adds support for the Trap#3 functions to, read/set the update and backup dates, and version numbers of files. And also adds the extended information trap.

Family Tree Magazine

In what he described as something to blow the trumpet for both himself and the QL, back on 11th June former QL trader and QL Today editor Geoff Wicks wrote:

“The new edition of Family Tree magazine, which is in the shops tomorrow, contains an article I have written on DNA and surname distribution.

It is illustrated by three maps that were all drawn on the QL using the Just Words! mapping software - with, of course, grateful thanks to Hugh Rooms for his work on the Mercator projection.

The editor asked me for some information on how I had drawn the

RWAP Software

We have been working hard to safeguard the future of the Sinclair QL through creating an online QL Wiki backed by a repository of QL titles.

The QL Wiki enables people to see what software and hardware was produced for the Sinclair QL. The repository enables people to purchase working copies when their microdrive cartridges fail, or they move onto disks or emulators. Where we can, we obtain permission from the copyright holders to re-release items on the market.

This has enabled us to bring some of the titles back to the market as well as re-kindle interest in the Sinclair QL and its emulators.

Old favourites brought back to life include:

E.V.A., Vroom
Black Knight, Double Block
Jungle Eddi, The Lost Pharaoh
Pangl, the Lonely Joker
Microdeal's Flight Simulator, QL Hopper, The King,
Night Nurse and Cuthbert in Space
Mortville Manor, Darkside of the Moon [£10]

We still retain our existing catalogue, including:

Open Golf, Return to Eden,
Stone Raider II, The Praws,
Hoverzone, Lost Kingdom of Zkul,
Deathstriks, Nornarday,
Flightdeck and QWord

All games are available on disk or for use with Q-emulator on the PC **from ONLY £5 each**

Microdrive versions also available - from £10 each.
Memory / system limits may apply - please check before ordering.

Visit the QL Wiki for more details on software, books and hardware for the Sinclair QL:

www.rwapadventures.com/ql_wiki

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Staffordshire ST11 9BA
Tel: 01782 398143
Email: rich@rwapservices.co.uk

Website:
www.rwapsoftware.co.uk or www.sellmyretro.com



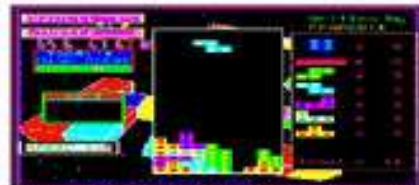
Vroom by Pyramide



E.V.A. by Westway



Mortville Manor by Pyramide



Double Block by Francois Lanleut



Night Nurse by Microdeal

maps to help readers who may like to try it for themselves. I had to explain to her that it was not possible on a PC and that you have to use a QL.”

At one stage, many QL users were into genealogy in a big way, thanks largely to authors of software such as FamilyTree and QL Genealogist.



The issue in question is the July 2015 issue of FamilyTree magazine – further information at :

<http://family-tree.co.uk/2015/06/family-tree-magazine-july-2015/>

QL Forum Passes 300 Members

Earlier this year we were quietly wondering if QL Forum would reach 300 members by the end of the year. In fact, it reached that milestone in July 2015, when a Spanish QL user joined as the 300th member.

At the time of writing, the Forum has reached 309 members. The 309th member goes by the moniker MIST (Till Harbaum) and has started a very interesting thread about trying to implement a QL in HDL. HDL is a Hardware Description Language, described on Wikipedia as “a specialized computer language used to program the structure, design and operation of electronic circuits, and most commonly, digital logic circuits.” - see :

https://en.wikipedia.org/wiki/Hardware_description_language

What struck me most about this posting was where MIST commented “It's a rather funny experience to implement a machine that I haven't even ever seen in real life.”.

When asked if involved with the MIST project (Atari and Amiga implementations in FPGA – hence the name **aMiga ST**) it turned out QL Forum member “MIST” was the one who built the MIST board and was trying to implement and a 680x0 computer system (the QL) on the MIST system.

The MIST board is not really about emulating older computers, it seeks to re-implement original computer hardware in FPGA. An FPGA is a custom microchip used to build a System-On-A-Chip on demand, and there have been some attempts to build a QL around such a system before, such as Peter Graf's Q66 system. I'll be watching this project with interest.

You can follow the thread about the MIST QL project on QL Forum at:

<http://qlforum.co.uk/viewtopic.php?f=2&t=1360&sid=50c37f9e54cde383875a79cba4255310>

New QL eZine

Tim Swenson writes:

I've felt the need to do some writing about the QL and things that I've been doing with it. I prefer to do long-form writing (a couple of pages) instead of just a few paragraphs in a forum posting. To fill this need, I've started a new e-zine (electronic magazine) for the QL. The zine will be free to any and all. I encourage any that want to contribute to please do.

Readers can submit ideas for articles, maybe some area of the QL that they are lacking information on. I don't intend for it to do news, because that is handled better in the forums. I would like to hear from other QLers how they are using their QL. These days, being a QLer is a lonely hobby.

When I did the QL Hackers Journal, I concentrated on content and not looks. In 1991, DTP was still in its infancy. With DTP tools like Scribus, SMSQzine will also have some emphasis on looking good with lots of colour. Since there will be no hard copies made, I don't have to worry about the high cost of colour reproduction.

As for how often the zine will come out, that depends on how much writing I do and any that others do. Since there will be no subscription cost, no one is at a loss if the zine stops publishing.

The first issue is available from my Google Sites page:

<https://sites.google.com/site/svenghj/home>

Just look at the bottom of the page for smsqzine01.pdf. There is also a zip file that contains digital data that goes with the magazine. No need to type in listings.

The first issue includes a Pascal compiler comparison, data-mining with archive, printing with emulators with Linux, and alternate configurations with SMSQmulator.



QPC and Windows 10

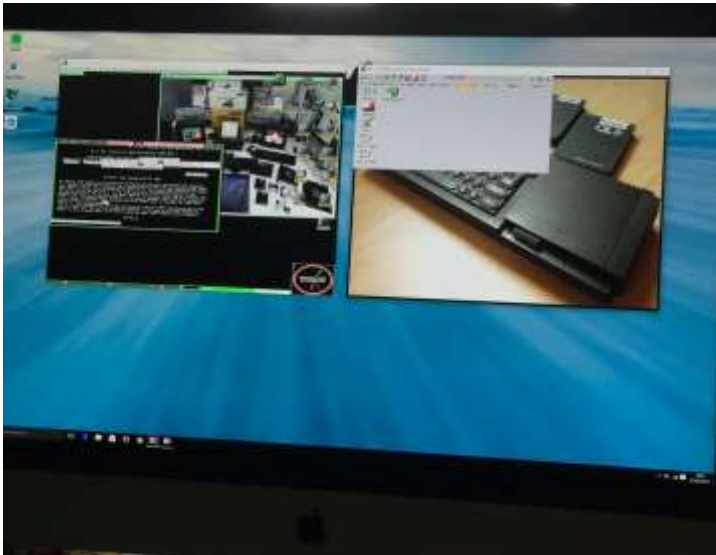
Several people have now commented that QL emulators seem to work well on Windows 10.

The release of Windows 10 is rolling out as free updates for existing Windows users. It is likely that the Windows users among us will wait a little while for confirmation that our QL emulation

setups are safe when migrating to Windows 10. Then we will be making the free Quantum Leap (sorry) to Windows 10. I will justify my pun on the basis that the change to Windows 10 will be free for most people within the first 12 months of becoming available. (In case anyone points out that Quantum Leap is the smallest possible change of state)

Several have reported that QPC2 seems to work well with Windows 10, while I know my son has successfully downloaded and run the Windows version of QemuLator in demo mode on his laptop, using Windows 10.

QUANTA magazine would love to hear of readers' experiences of using these and other QL emulators on Windows 10. To start things off, here's a picture kindly supplied by Simon Foster, of an Apple Mac running Windows 10 with two copies (latest and older version) of QPC2 running side by side.



Screen Dump

JOCHEN MERZ SOFTWARE

Kaiser-Wilhelm-Str. 302
47169 Duisburg, Germany

Fax +49 203 502012
EMail: SMSQ@J-M-S.com

SMSQ.J-M-S.COM

Thanks to Marcel, QPC2 is now freely available.
You can download it from Marcells homepage

www.Kilgus.net

If you wish to print from QPC2, then you need

QPCPrint

... which is available from J-M-S.

Only 39.90 if you choose EMail delivery.

For additional 4 EUR, delivery will be on CD.

QPCPrint will allow you to print to (more or less) every printer which is installed under Windows (dot matrix, ink, laser, PDF "printer", FAX "printer" etc.)

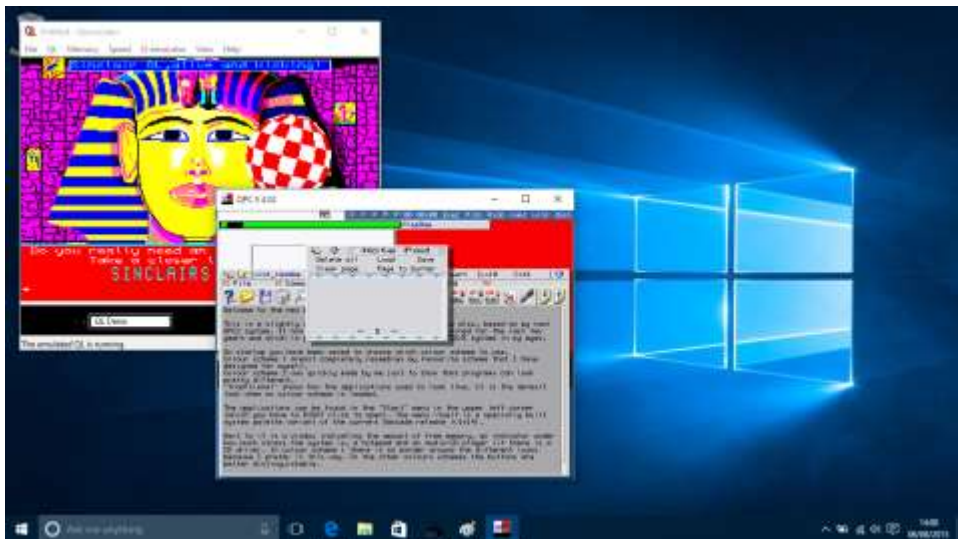
You can place your order via letter or use the SSL order form on SMSQ.J-M-S.COM - click on "Online orders".

If you order by Mail or through the SSL contact form: We now accept VISA, MasterCard, Diners Club, JCB, Discover, UnionPay, BCard, DinaCard and American Express!

The order form has not been updated for the new card types at the time I write this ad, but it will be updated soon.

I am still working on changing the forms and implementing SEPA on all the order forms.

And, not to be outdone, here's a screen dump from my son Iwan, running the QemuLator 3.10 for Windows and the QPC2 demo on a Windows 10 laptop:



Screen dump

SMSQ/E Update

SMSQ/E Registrar Wolfgang Lernerz has released SMSQ/E v3.22. This is mainly of interest to Atari and SMSQmulator users. Wolfgang says that the Atari monochrome works again, though there still is a little quirk when moving the mouse pointer. This was tested on an Atari STE, thank to Michael Grunditz for testing that. There is also a small fix when moving windows around the screen (movemodes 1 and above). Also some SMSQmulator fixes.

Binaries and sources available to download at :

<http://www.wlernerz.com/smsqe/>

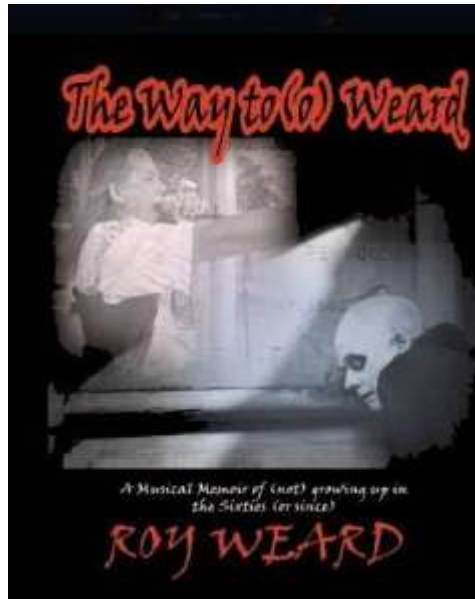
SMSQmulator 2.10

Version 2.10 of this Java-based emulator from Wolfgang Lenerz is now available. Versions 2.08 onward feature improvements in the floating point handling. <http://www.wlenerz.com/SMSQmulator/>

Weard Experience

Marcel Kilgus writes:

One prominent ex-member of the QL community (Roy Wood) has written an autobiography called "The way to(o) weard". (*Roy performed under the name Roy Weard – News Ed.*)



Weard Book Cover

Apparently Darren is to blame for this, but I did enjoy the book very much and read the ~500 pages in just a few days. The time span is mostly before he became seriously involved in the QL, it's only

mentioned two or three times. The rest is quite literally sex, drugs and rock 'n' roll! But I thought people who knew him might still be interested. I got my signed copy here

<http://woodenlion.com/shop.php>

or you can get it on Amazon which is slightly cheaper outside of the UK.

Toolkit 3 Sources

While Toolkit 3 has been available as freeware for some time, thanks to Martin Berndt, I have also been able (thanks to Ralf Reköndt) to make available the full source files for the toolkit. Martin gave Ralf permission a long time ago, to do with his software, assembled or source, whatever he may wish to do.

Ralf says “Martin used self modified INCLude and MACRO files which are essential to reassemble. They are also essential for all other program sources from Martin (DiskTool, Perfect Pointer Tools, but not QKick (ASM source lost) and Diskmon (BCPL source lost)).”

QL Assembly Language Book

Norman Dunbar writes:

After much work, some wailing, some gnashing of teeth and a good few hours typing on my phone while on holiday recently, I have finished updating the file at:

http://qdosmsq.dunbar-it.co.uk/downloads/QLToday/QL_Assembly.pdf

which is the good old Assembly Language book I released into the wild just before Christmas.

Changes are:

- George's observations and comments incorporated, numerous typos fixed,
- LibGen removed until I fix it as there looks to be a chapter rewrite required,
- A new, much nicer format used,
- Code reformatted to not wander all over the margins,
- Proper table layout,
- Much nicer code layout,
- Orange! (You'll have to read it to follow that one!)
- 375 pages of sheer bliss, and working cross references and a full, clickable index.

Assembly Language Mailing List Issue 2

Norman Dunbar writes:

The long awaited Issue 2 of the QL Today Memorial Assembly Language Mailing List irregular eMagazine is now available:

http://qdosmsq.dunbar-it.co.uk/downloads/AssemblyLanguage/Issue_002/Assembly_Language_002.pdf

At the moment, only a PDF version is available. Apologies to those of you who prefer something else. I know what it's like attempting to read a PDF on a Kindle, for example, it's just not right! Hopefully, I'll get something fixed up real soon.

General Election 2015

Geoff Wicks reports that the 2015 update of his General Election

program for the QL is now available. General Election is an election analysis program with the 2015 general election result for the main parties in England, Wales and Scotland.

Includes numerous analytical possibilities and extensive graphics including interactive political maps. Comes in QL colour non pointer version and GD2 colour pointer version, the latter requires a minimum screen resolution of 800 x 600 pixels.

An election archive of versions of the program from 1983 to 2010 is also available to download.

General Election may be downloaded from :

<http://www.gwicks.net/downloads.htm>

Q-Help and Q-Index

Both of these programs are now available to download from my website's miscellaneous software page. Both programs were originally associated with the SuperBASIC Reference Manual and now available to download free of charge.

Q-Help is intended as a guide for the SuperBASIC programmer on the move. It provides help files covering all of the standard keywords available on QL operating systems (QDOS, Minerva and SMSQ/E) as well as a wide range of Public Domain toolkits.

Each help file typically contains details of the syntax of the keyword, together with a brief description of its use. These help files can be easily edited and added to; as well as used together with QD from Jochen Merz Software to assist in the creation of SuperBASIC programs.

The SBASIC/SuperBASIC Reference Manual from RWAP Software is a programmer's guide to the SuperBASIC language, implemented on the Sinclair QL and compatible operating systems. This is a computer based Index program, which is supplied with the reference manual, enabling you to find the relevant parts of the manual quickly and easily. Pointer driven, uses the Menu Extension (menu_rext, not supplied) from Jochen Merz Software. Download both programs from :

<http://www.dilwyn.me.uk/misc/index.html>

QLone

Now freeware, this is a Microdrive cartridge cloning utility based on simple BASIC extensions, from Martin Berndt. Can also copy a cartridge protected with random number formatting. Includes an enhanced QLone+ with more extensions.

At the moment, only a manual (in German and English versions) for the standard two extension QLone is included, anyone have a manual for the extended QLone+ version I could make available? This includes the extensions CAT, DEV_USE, USE_M, USE_F, CLONE, CLONE_ALL, CFORM, CHANGE, CLEAN, INFO, SET_BUFFER, KEYS_ON, KEYS_OFF, ACL_ON, ACL_OFF
Download QLone from <http://www.dilwyn.me.uk/files/index.html>

BOOT128

Sometimes useful for older software which will only run on a 128K RAM system, this package is a pair of short SuperBASIC programs to reset an expanded memory QL to 128K of RAM like an unexpanded machine, which helps to save wear and tear unplugging a RAM card to use these older programs.

One version of the program runs on a version AH or JM QL, while the other is for version JS or MG.

Download Boot128 from <http://www.dilwyn.me.uk/tk/index.html>

Trump Card ROM

Thanks to Massimo Raffaele, I have been able to include a version 1.36 Trump Card ROM which includes Toolkit 2 v2.26, neither of which I had come across before. Massimo has also asked me to include a short text file describing how he managed to capture a copy of the ROM image - Miracle Systems expansion cards often have system ROMs at non-standard addresses, since they provide additional RAM using the addressing space normally reserved for expansion card memory, so you have to work out where and how to capture the ROM image from memory. Click on the link to trump.txt to read his notes.

<http://www.dilwyn.me.uk/qlrom/index.html>

New Qubide

Jose Leandro has announced in August on QL Forum that he intends to offer a new Qubide with v1.56 ROM. The information about this project is here:

<http://hardware.speccy.org/temp/qubide-i.html>

The new Qubide has two differences from the original: It doesn't have an expansion bus through connector. It has an optional 512K RAM (this can be removed without affecting Qubide operation if desired). He thinks that the price will be similar to the previous version he made (40-45€ + shipping).

This is a photo of the new Qubide:



The picture shows another smaller PCB which Jose has made. A ROM-EPROM kit. This kit allows you to replace the 2 original ROMs with a 64K EPROM (typically a standard 48K ROM such as JS, MGE or Minerva, and Toolkit 2 extensions sets).

The board includes a connector which unusually protrudes via the often unused CTL1 joystick port to allow the upper 16K of a 64K EPROM, where the toolkit EPROM image would reside, to be disabled, useful for software which does not work with Toolkit 2, or to allow an external plug-in 16K EPROM to be used.

Pin 20 of the IDC connector is connected to +5V, allowing some SD-IDE, CF-IDE and DOM disks to be powered. A DOM disk is a disk-on-a-module flash memory unit, which emulates a traditional

hard disk drive by including a flash-to-IDE converter so no extra driver software is necessary to allow the DOM to be used via an IDE hard disk interface.

These devices can range from tens of megabytes to about 64GB in capacity, are usually much smaller than traditional hard disks and do not require the bulky power supplies of hard disk drives.



SMALL ADS

FOR-SALE

Three spaces around a page or more in size (either blank or bordered) for keen amateur articles (MUST BE SEEN), three available are Comments, Programming, Reviews. Offers in excess of 100 words to the Editor

!!!Worried???

Don't worry about your spelling or grammar not being up to scratch, that is something we can correct or leave as necessary, the Editor's decision is final. Why not write a review, A review of a piece of hardware you have recently seen, obtained or bought that is related or used with the Sinclair QL. A review of a piece of Software you have bought or downloaded legally from a website that doesn't stick a virus on your system. Reviews of any other media such as books, magazines or even leaflets that other people may appreciate. Contact Mr Privett for details on how you can overcome your worry.

WANTED

With FTC (Fleet Tactical Command) 1 having been found, I'm now trying to track down FTC II by Diren which is currently missing in action. I'm also after Top Team by Arunsoft which was a football management game. If you can help please contact Peter at:

peetvanpeebles@yahoo.co.uk

LOST

The ability to do something positive, then submit something to the editor, you know it makes sense.

£££ SPARE-TIME?

Earn yourself lots of gratitude with a certificate of thanks by contributing something to the magazine. We can't pay you £££s or ££s or even £ but what you will be doing will be rewarding in itself and you get your name in typeset style lights (without the lights bit). **Interested?**, then contact the editor of the magazine via the contact page inside the front cover. **Not interested?**, then contact the editor of the magazine via the contact page inside the front cover. We will be glad to hear from you.

SHEDS SHEDS SHEDS

Shed loads of space for you to write or submit that SuperBASIC listing for the magazine. **Short** Listings - any number of lines really, from just a few to a couple of pages, single or multiple procedures and functions. As long as you have written to either solve or explore a programming problem. Or even just for a bit of experimental fun. **Long** listings? No program is too big, no language too strange, whether its just concepts, SuperBASIC, block diagrams, Boolean logic, assembler, mnemonics (that's one for you George), C# C++ C- - or just plain C, Pascal, Fortran or even S*BASIC, anything about everything would be appreciated. What if you don't know if your program listing is too long to be short or too short to be long? **NO WORRIES**, we accept medium listings too throughout the year so get writing **NOW!**

Contact us in the usual way, so contact us **NOW!**

If you would like to place a small ad then go to page 2 for full details of how to go about it, options are for QUANTA members as well as non-QUANTA members.

Information about this project is here, including circuit diagram and pictures, Eagle and PDF files:

http://trastero.speccy.org/cosas/JL/ROM-EPROM_QL/ROM-EPROM-QL.html

(In Spanish, but easily translated in a browser with web page translation services such as 'Translate with Bing')

You don't need this board to run Qubide in a Sinclair QL but some programs may require the TK2 extensions to work. This kit cost around 8 €. If there are enough people interested in this kit, maybe Jose will make it.

Jose wrote: "I will open a period of one month. If people are interested, please send me a private message telling me what you like (Qubide, Qubide + kit, kit) so I'll make an idea of the project." Send the PM (private message) to jose_leandro via QL Forum.

(QL Forum members can send private messages to each other which do not appear on public display in the Forum boards – although if they have not written anything on the Forum since joining they may have to ask the Forum administrators to activate their private messaging facility – News Ed).

TSP REPORT

GEORGE GWILT

In Volume 32 Issue 2 of QUANTA Steve Poole described his program dealing with the Travelling Salesman Problem (TSP). He indicated that I was producing an Assembler version of his program. This has been done with some slightly surprising results.

The obvious way of producing a machine code version of a SuperBASIC program is to compile it. However, Steve found that TURBO refused to accept his program for reasons of which I am ignorant. Maybe it was to do with the central element of the program - a large two dimensional floating point array called $t(i,j)$.

The program produces the shortest route joining a set of points the salesman must visit. Each point is visited once, and only once, except the starting point which is also the ending point. Steve's program sets up a random set of a given number of points, finds a route joining the outermost points and then proceeds to incorporate the inner points, one at a time, to the route which is redrawn on each occasion.

The coordinates of the points and many other attributes of these are held in the array $t(i,j)$. the value i referring to point number i . The value j refers to the particular attribute. Obviously the indices i and j must be whole numbers. No meaning can be attached to point number 6.034! However, I noticed that inside the program indices were being held in the array.

At a later stage these indices were extracted from the array and were used to point to other elements in the array. They were being used as integers. To allow this to happen I arranged for such integers to be converted to floating point before being entered in the array. I also arranged for the extracted floating point values to be reconverted to integers before being used as pointers to elements in the array.

Such conversions require the use of the vectors RI.EXEC or RI.EXECB which allow performance of floating point arithmetic on the QL. I have described how this can be done in QUANTA

Volume 31 Issue 3. The routines to do the conversions are given here. These assume that fp has been set as a variable on the data stack.

; Puts D5.W to A5

```
set_int    lea        a_st,a1
```

Arithmetic stack

```
          subq.w     #2,a1
```

space for an integer

```
          move.w     d5,(a1,a6.l)
```

```
          lea        s6,a3
```

```
          lea        vars,a4
```

Variables space

```
          bsr        do_execb
```

D5.W -> fp

```
          bne        er6        ---->
```

```
          movea.l    a5,a2
```

```
          lea        fp(a6),a3
```

```
          move.w     (a3)+,(a2)+
```

```
move.l    (a3),(a2)
```

```
rts
```

```
; Puts the integer from t(a,b) to D1.W
```

```
; On entry D1.W = a:D2.W = b
```

```
get_int   bsr      set_ad
```

```
address in A2
```

```
lea      fp(a6),a3
```

```
move.w   (a2)+,(a3)+
```

```
move.l   (a3),(a2)
```

```
lea      a_st,a1
```

```
lea      s18,a3
```

```
lea      vars,a4
```

```
bsr      do_execb
```

```
sel integer to stack
```

```
bne      er18      ---->
```

```
move.w   (a1,a6.1),d1
```

```

                addq.w    #2,a1

reset stack

                rts

s6             dc.b      qa.float,p_fp,w_fp,0

int -> fp

s18           dc.b      g_fp,w_fp,qa.nint,0

fp -> int -> stack

```

These conversions take quite a few instructions. This, combined with the instructions internal to RI.EXEC and RI.EXECB obviously is going to take far more time to execute than the simple

```
MOVE.W D5,(a5)
```

and

```
MOVE.W (A2),D1
```

which could be used to extract and store integers.

At this stage I managed to identify regions of the array t(i,j) which contained items only used as integers. By putting these integers into the first two bytes of the area where a floating point number would otherwise be stored, I was able to use the simple MOVE instructions and avoid the conversions. This was obviously going to save processing time.

Since the whole object of this exercise was to attempt to reduce the time taken I added to the assembler program the facility to set the number of points by parameter. I also arranged that a second parameter would determine whether or not the outline would be redrawn each time a new point was added to the route.

Some of the timings I found are given below. Since each trial uses a random set of points I made several trials for each number of points and the timings given here are averages.

TIMINGS (in seconds)

Number of Points	Route Redrawn	Route Not Redrawn
30	0.10	0.04
150	7.85	6.50
200	18.45	15.63
250	33.92	30.77
300	57.98	52.47

By this stage, however, Steve had rewritten his program largely using integers instead of floating point numbers. Not only did this save time but also it allowed a larger number of points and indeed compilation by TURBO!

It looks as though a rewrite in Assembler will no longer be needed. But there remains, as far as I am concerned, a problem. This is that the versions I did manage to produce did not seem to work on Steve's machines. As a result I am very reluctant to publish any Assembler versions of the program. *(If you have any comments or suggestions regarding the TSP program please write to editor, see contact details on page 2, Ed.)*

No I didn't use an exciting abbreviation just to get you interested this was because I couldn't fit the complete title in the contents page nor the heading of the article.

This article is to primarily enthuse some interest in possibilities "For Further Thought".

For those of you with sufficient memory capacity and recall, I did an article in a previous issue of this magazine regarding LED replacement of the indicators of power and Microdrive activity. With the benefit of cheaper and cheaper components, I am exploring ideas of what now could have been and future maybes in the use of LEDs as being useful to the cliché group of QUANTA people, i.e. QL Users AND Tinkerers Association specifically.

Disclaimer

This is important, this article is about generating interest, it may not be practically perfect, it may also be more complicated than the layman ideas I have, so please give some slack in your understanding. I have little knowledge at the processor complexities level of how things work, especially timings, so that may be an area I may have totally wrong.

OK where to start? LEDs have come a long way since their invention, I like many other marvelled at simplicity, cheapness (the red ones) and that they were not subject to the failings of the incandescent indicator light bulb. In the late 70s to the late 80s I worked at the Ford Motor Company, Dagenham and we had

rooms full of indicator boards for the various functions and processes of conveyor systems and paint spray booths. All these indicators used a fair amount of power and created a fair amount of heat. They had consistent fail rates too as with most filament bulbs and had to be changed regularly. We even had indicators to tell us when a bulb had failed on some systems.

Replacing all these bulbs with LEDs would have saved thousands of pounds in a multitude of costs, such was the LED's advantage. Then came the fixed 5V LED, the flashing LED, the different colours LED etc. Today LEDs are plentiful to enable the move to LED lighting only. The reduction in producing the old fashioned element bulbs for domestic use is becoming even more apparent. So what can we get cheaply in the form of an LED that could be useful? Available from all cheapy shops, this contains circuitry and LED that varies through a spectrum of colour.

RWAP Software

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Membranes**

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£12 each plus post and packing**

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Post and packing:
UK £2.50
Europe £2.80
Rest of World £3

Visit the QL Wiki for more details on software, books and hardware for the Sinclair QL:
www.rwapadventures.com/ql_wiki

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3 Dale View Court, Fulford, Stoke-on-Trent
Staffordshire ST11 0BA
Tel: 01782 398143
Email: rich@rwapservices.co.uk

UK Cheques payable to 'R. Mellor' or use PayPal.

Website:
www.rwapsoftware.co.uk or www.sellmyetro.com



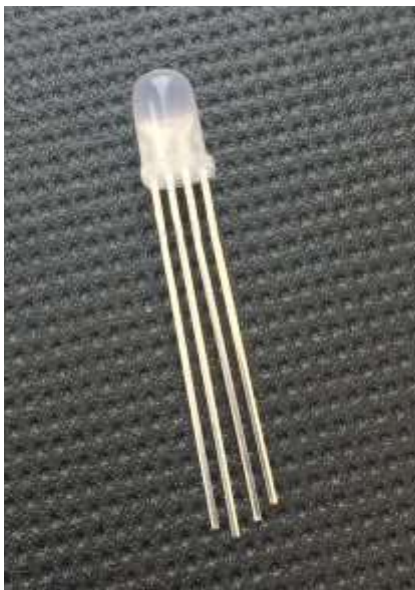
Why a bad keyboard membrane could change your whole career strategy!

Working to safeguard the QL for the future. www.rwapsoftware.co.uk



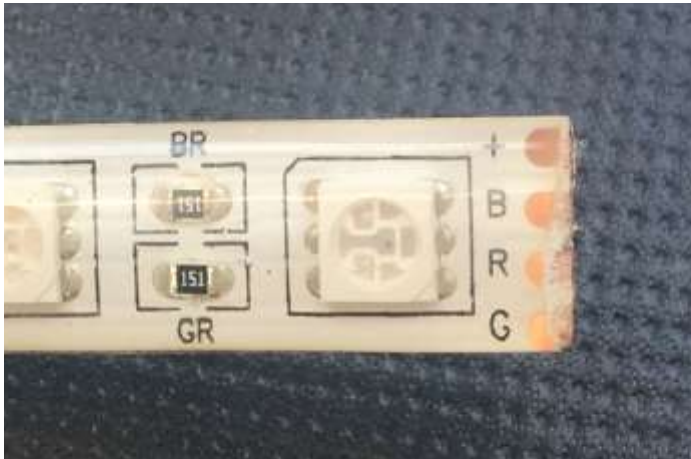
Solar Powered LED Light

An Ebay search you can also pick up these fairly cheaply too.



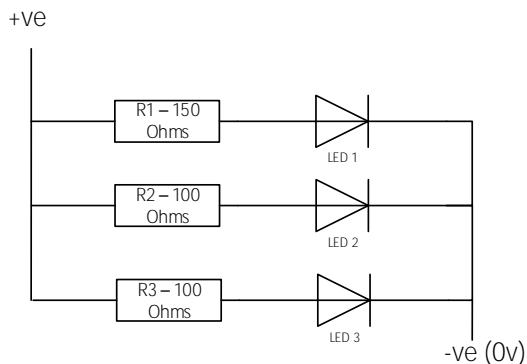
A Four Pin RGB LED

These LEDs allow you to have virtually any colour you like by just selecting the right voltages on each of the pins. They also come in a compact form for mode lighting and other possibilities.



Ribbon Style RGB LED

So using this type of LED you can indicate different colours, the circuit for such an LED could typically look like this in a common cathode configuration. The illumination from each LED being fairly equal



This would illuminate a whitish colour

The interesting part comes when we utilise the three colours separately as an on or off condition, as shown in the following table. Mode 8 anyone!

	RED	GREEN	BLUE	RESULT
0	0	0	0	No Colour
1	0	0	1	Blue
2	0	1	0	Green
3	0	1	1	Cyan
4	1	0	0	Red
5	1	0	1	Magenta
6	1	1	0	Yellow
7	1	1	1	White

At a fixed voltage level we can realise 7 colours out of 8 possible decodes of 3 signal lines. This enables a total of 8 conditions using just one LED, where a specific colour is attributed to condition. The colours also correspond to the Sinclair QL colours in mode 8 so there is some form of synergy. Now we have to accept that there are certain cultural signifiers that are accepted as norms by todays standards, for example:

RED can signify Stop, Danger, Off, Armed and Power depending on its application.

GREEN can mean Good, Go, Working (On)

AMBER can signify Error, Ready or as in the QL (Power On)

BLUE can signify all of the above

When you power up the QL two things noticeably happen, the power light (orange) comes on and Microdrive 1 running light (red)

indicates when you have pressed F1. The power LED I will come back to later, however in addition the Microdrive LEDs illuminate when you access the drives using your own software or commands (DIR FLP2_ for example).

Purely as a concept these three LEDs of the QL could be put to better use, using the same space provided in the original Black Box QL, the LEDs could be replaced by RGB LEDs. The only downside at the moment is that I am not aware of rectangular LEDs in the RGB category so the round or flat ones would have to suffice for the time being.

The power used in the QL comprises of +12, -12, +9 and +5, now to avoid additional and more complex circuitry to detect -12v, let us assume for a moment that if +12v is present then -12 is also present, thus we could represent :

+12v	=	RED
+9v	=	GREEN
+5v	=	BLUE

Giving us :

All Voltages Present	=	White
No 9 Volts	=	Magenta
No 5 Volts	=	Yellow
No 9 and 5 Volts	=	Red
No 12 Volts	=	Cyan
etc.		

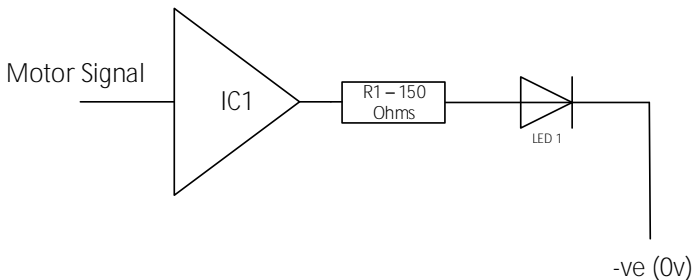
Thus providing a quick and easy indication as to the status of the power supplied to various parts of the QL main board. I cannot resist a phrase here, *“if the LED is all white, it’s all right”*.

So on to the Microdrive LEDs, which display when power is supplied to the motors that drive the capstan wheel. This is not all that is going on however. There are several conditions we could, using some CMOS logic, extract signals.

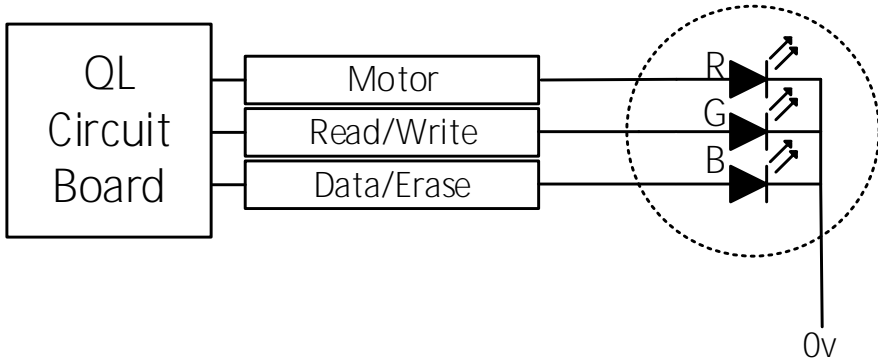
There is the Motor On/Off signal, the READ/WRITE which effectively could be separated in to two signals, Erase and Data which are all linked to the Motor circuit. By separating the signals individually we could at least get a visual feel of the working QL.

Just as an aside, those of you who still and those of you who remember dial signals and how they sounded. You could always tell by the pattern of bleeps as to whether you were going to get a connection or not just by listening, well it's a bit like that with the LEDs.

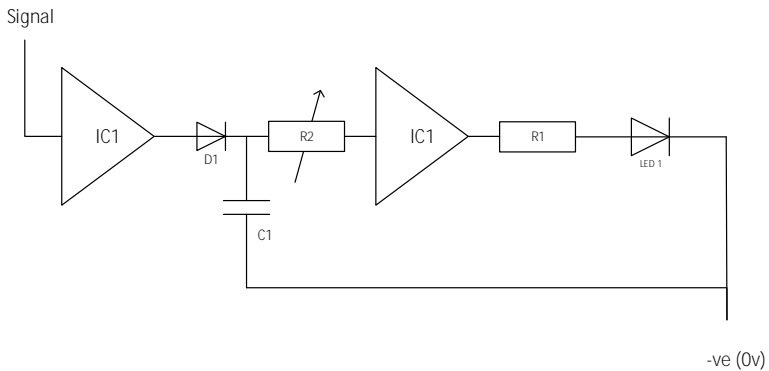
The most basic of which is the Motor signal, a circuit shown below would output a relevant signal to one of the RGB channels, preferably RED.



IC1 would be a 6 x logic gate either buffer or inverter to detect the relevant signal producing a positive voltage at the out enough to drive the red pin of the RGB LED. So far so good and similarly for the two other circuits Read/Write and Data/Erase driving the Green and Blue parts of the LED.



Thus providing variations of colour depending what was going on. However, before I hear you cry pulses. The following circuit should be flexible enough to take this in to account and adjusted by experimentation.



Of course, more precise accuracy could be taken by using Schmitt trigger gates to obtain consistent thresholds of when the outputs change state. Test programs could be used to give the user an indication of what to expect when certain Microdrive functions are being used. Formatting a cartridge, accessing data, loading a program, DIR, and writing data just to name a few.

As stated at the beginning, these are just some musings, concepts and ideas I have been throwing about to make the electronic side of indicators things a little more complex than just the straight forward on/off traditionally used for LEDs. I am currently thinking how best to detect and display $-12v$ in a \pm supply situation. If any reader has some ideas then let the editor know.

TSP SMALL UPDATE

STEVE POOLE

Thanks to a member of the QL Forum, great progress is being made in optimising the shrink TSP. We are now running 256 nodes in 1 second, and there is still plenty of scope for more acceleration.

Consider this to 100 nodes in 11 seconds, using the shrink version as published in the QUANTA magazine. The QL community is still alive and kicking, and I wish it a long and successful career.

FORUM SUMMARY

LEE PRIVETT

The QL Forum celebrates its birthday at the end of this year and has been running since 2010. It seems fitting to give, not a history of the forum, but currently what is being talked about and the sorts of topics people are asking other QLer's for help, guidance or just for information.

The QL Forum advertisement can be found on the back page of this magazine and just in-case you didn't know, it has a

QUANTA members only section where you can also download listings from this magazine where appropriate.

So here are the Forums Top Five current topics (some of the text has been lifted from the site thus names are removed to protect peoples wishes).

Number 5

A forum member has asked if there is a list of software that is incompatible with Minerva 1.81. There have been 18 Posts in replies and it is stated that Minerva is actually one of the best upgrades you can fit to a QL, this was in addition to memory expansion and a disk interface.

Number 4

Another member is trying to understand some of the details regarding the QL's hardware in order to re-implement it in HDL. They have had 11 replies in posts and the latest refers to an understanding of what an IPC function is.

Number 3

A member has re-sponged some Microdrive pads and is now offering them for sale on Ebay.

Number 2

Another well known forum member has reported some findings on using QL emulation software on a Windows 10 based operating system.

Number 1

A member is writing a cross platform port of Jan Venema's

QLAY, to support Mac and Linux (in addition to Windows, which QL2K supports). He states that most of the basics in his implementation are working, however he does still need documentation about the Microdrive implementation in the QL.

This sort of question has cropped up before regarding Microdrive documentation and is very scarce, however, he has had a total of 32 replies with a final response pointing towards an excerpt from Minerva source code showing that it reads the block header and the data.

Visit the QL Forum at: <http://www.qlforum.co.uk/>



N E M Q L U G

Invites anyone with an interest in the
Sinclair QL Micro computer,
its derivatives and emulators
to a weekend workshop

On Saturday 26th and
Sunday 27th September 2015

To be held at 3rd Davyhulme Scout Headquarters,
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There will be a Chinese Banquet on Saturday night
at a cost of £25.00, please book by 19th September
There will be a large hall for exhibitors, with plenty of
power points available

There is a separate room, if required, for anyone
wishing to give a talk or presentation
All day refreshments available
There is car parking on site

Hotel accommodation is plentiful in the vicinity

Contact Sarah Gilpin—Details on page 2

COPY DATE for OCT/NOV 2015
ISSUE is: 5th OCT 2015

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